

Read me file for EIAS 8.0.0 July 15, 2010

There are new project tutorials and a large number of video tutorials on the EIAS3D web site that illustrate all of the new features in EIAS 8.0.

**NOTE: The background options (map, sky, ground, etc) that were in the World Info window have been moved to the Camera Info window. Therefore, each rendering camera can have its own set of background parameters.**

EIAS 8 New Features:

## **1. LIGHT PACK**

### **1.1 Fast soft shadows**

The soft shadow system has been completely rewritten. Fast soft shadows can be enabled for all types of lights. This new method utilizes GI engine to sample soft shadows and it is several times faster than before.

The old optimization ("Optimize shadow generation") has been rewritten to have more controls.

### **1.2 Area lights**

Area lights are a fundamental requirement for most indoor and room scenes. EIAS 8 includes them as a built-in light type. Area lights can be equipped with HDRI textures (e.g. to replace a series of small lights with only one textured Area light). They can be also used in the role of tube light with real soft shadows.

### **1.3 Luminance Light Objects**

This variation of Area Lights uses real geometry (polygons) instead of an abstract light shape. You can create lights with any arbitrary luminance shapes. There is also a special "hidden" option for Light Objects that allows them to have bouncing illumination for sky light and outdoor scenes.

### **1.4 Photon Mapping**

Photon mapping is a popular and effective way to calculate indirect illumination and light bouncing. Photon maps can be stored and reused, thus allowing fly-through animations to be rendered much more quickly. Their illumination can also be baked, that is to say, transformed into illumination maps.

### **1.5 Quadratic light drop-off**

Quadratic falloff is a new kind of light drop-off. It provides a physical light-model that corresponds more realistically to real-world lighting. An example of this type of drop-off can be found in a simple household light-bulb. Its intensity is huge when you hold your hand close to it (you can even see light transmitting through your hand), but, as you move your hand away, this intensity drops-off very quickly.

### **1.6 Light Customize Tool**

This new graph tool is a flexible modifier of a light's behavior. Unlike the GI Diffuse and Luminance multipliers, the Customize Tool changes illumination selectively. For example, you can increase the illumination in dark areas only, but leave the brighter areas of the scene unchanged.

### **1.7 New GI Saturation Option**

This new option decreases the GI reverse illumination saturation providing more color bleeding control.

## **2. TEXTURES PACK**

### **2.1 EXR and 16-bit image input support**

Animator and Camera are now both capable of reading and using both EXR and 16 bit QuickTime files for any use. EXR textures can be used in the role of HDRI files(with or without alpha channel).

### **2.2 Rotoscope textures and Backdrop options**

#### **Backdrops**

Backdrop options have been moved from the World Dialog to the Camera Dialog, this is because, functionally, they are the same as Rotoscopes.

#### **Rotoscopes**

You can now edit rotoscopes as if they were normal textures - that is to say, double clicking on them will open the standard Texture Info window. Two or more rotoscope textures are combined according to their blend modes, just as material textures. Procedurals can be used as well.

In EIAS 8, a rotoscope can have any mapping type, just like reflection maps (Spherical, LightProbe, Vert Cross etc.). The result will be that your camera will seem to be inside a surrounding infinite sphere with the rotoscope applied to the inside of it. As you move the camera, you will see different parts of this environment. This feature can be previewed in Animator's View windows.

### **2.3 Reflection maps**

Reflection maps are now combined according to their blend modes. A procedural applied in the reflection maps list now is treated as a real reflection (in EIAS 7 it was a reflectivity multiplier).

### **2.4 Sky maps**

All sky maps lists (GI Sky maps, world RT reflections and refractions) can have any number of textures that are combined in Camera. Procedurals can be used as well. The only exception is "Adaptive sky map" GI mode. It requires a single texture that should be a LDR/HDR image.

## **2.5 Normal maps**

Normal maps (a kind of bump map) are moved to tangent space because now it's a more popular and usable kind of normal maps that allows the use of UVs and others kinds of mapping.

## **2.6 Displacement Sea Level**

This new additional control adds/subtracts a constant value to the applied displacement. It's useful for organic shapes such as those coming from ZBrush.

## **2.7 Light maps**

Instead of a single light projection map, EIAS 8 offers a standard texture list of light maps supporting all types of reflection mapping and procedurals.

# **3. USER PACK**

## **3.1 New Strength map tools**

Save/Load strength map to re-assign it from a low-res model to a higher-res one or vice versa

Strength maps blur/contrast tool

Strength map mirror tool

Strength map unfold tool saves a map as a .img texture by using the model's UVs

### **3.2 Renderama improvements**

Renderama now displays the output file name of the job being rendered

You can now re-order jobs inside the Renderama interface

Whenever you enable or disable a job or a slave, this is now instantly saved to the preferences to aid in crash recovery

Renderama can now see and use folders nested inside the EI Shaders and EI Sockets folders

### **3.3 Animator improvements**

"Remove from selection set" is added to contextual menu

Enable/Disable channels animation ("green triangle") was added to the preferences

An exported FACT file can be automatically re-imported and added to the project

Imported series of FACT files (for cycle groups) are now added in order sorted by their file names

When you right click on the title bar of the Camera View window, the pop-up menu shows the label color and a light/camera icons next to the respective items in the list

Bump normal maps are now supported for camera maps

A new contextual menu was added for the textures in the Material Info window. Procedurals interfaces also can be opened by selecting the procedural in the list and pressing the 'P' key

Layers shaders can be collected in a separate folder (but located inside "EI

Shaders" folder)

In the Texture Info window for Flat, Cubic and Procedural mapping, a new "AutoEdit" pop-up was added to constrain XY(Z) scales.

A new feature, "Fill Velocities", was added to the Function Curve Editor to support auto ease-in/out

### **3.4 Rendering to PNG format**

EIAS 8 can now render sequences natively to the .png format (millions and millions+). This was added to overcome the resolution limitation experienced with QuickTime files (like PICT).

## **4. New Plug-Ins and Shaders**

Note: These all require EIAS 8.0 and will not function in earlier versions.

### **4.1 EI Shaders API improvement**

Starting with EIAS 8.0, procedural shaders can read geometry at render time; similar to model plug-ins.

It gives shader developers the ability to create advanced silhouette and cartoon effects.

### **4.2 ShadeBevel Shader**

This new shader creates a bump to fake bevels/chamfers along the unshared edges of a group. This creates Instant and flexible results even for very low-detailed models.

### **4.3 Parametric Surface Plug-In**

This new plug-in creates shapes and surfaces analytically by using formulas. It works together with XPressionist. It includes a library of formulas so you can use it without any math skills. You can create your own formulas and design UIs for them.

### **4.4 AdaptiveDicer Plug-In**

This new plug-in provides a more robust and more featured triangulation that can be selective, depending on an applied weight map or on vertices/facets colors. The plug-in can be also used as a "filter" to remove unwanted non-planar geometry, redundant vertices and double-sided polygons.

### **FIXED BUGS:**

Pressing both mouse buttons at the same time on a pop-up no longer crashes Animator

Undo works properly when a FACT file is added to the project

Undo works properly when a group with strength maps is deleted

Undo stack now resets when a project is closed and a new one is opened

Crashes when switching frame rate in project window fixed

Replace button in the Material Info window, Transmission tab didn't work

Real time deformations now work if two or more objects are dragged together

Adding non-image files will no longer crash the strength map system

Camera no longer crashes if a greyscale .mov file is used

Animator no longer freezes if Blur Frames is set to 2 and the Go button is pressed

Rotoscopes being shown in the View windows are redrawn if their projection type is changed.

The preview speed in the Camera View window should now work as documented for Drop Frames

Edit text operators (like @\*2) are supported in the Render Resolution X.Y (Camera Info window)

We added more code to prevent Animator from crashing after a preview rendering.

Lensflare and Lightflares will no longer be causing out of memory errors (many more can be used).

.ban files with OS X line-endings are read properly.

Playing QT movies in Animator's image display window no longer causes a crash

